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RESULTS OF THE 1964 CHENEY TANGANYIKAN  
EXPEDITION.  
ORNITHOLOGY

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By HERBERT FRIEDMANN AND KENNETH E. STAGER



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DAVID K. CALDWELL  
*Editor*

RESULTS OF THE 1964 CHENEY TANGANYIKAN  
EXPEDITION.  
ORNITHOLOGY

By HERBERT FRIEDMANN<sup>1</sup> AND KENNETH E. STAGER<sup>2</sup>

**ABSTRACT:** The 1964 Cheney Tanganyikan Expedition collected 123 species and subspecies of birds, the majority, and the most interesting and important, of which came from two isolated, forested mountain areas, the Uluguru Mountains and the Ukaguru Mountains. Prior to the work of this expedition the avifauna of the Ukagurus was practically unknown, as only 7 kinds of birds had been taken there by one itinerant naturalist. The present list records 43 species from that area. A history of the ornithological exploration of the Ulugurus and a complete list of the birds definitely recorded from there, 165 in number, of which 9 are new records at this point, are given, plus 47 others, the specimens of which have not been examined by a professional ornithologist, as well as a report on the Cheney specimens. The Cheney Expedition also collected a few birds in the lowlands east of Lake Manyara and near Babati. These are listed in the present annotated catalog as well.

The 1964 Cheney Tanganyikan Expedition of the Los Angeles County Museum worked primarily in two isolated mountain areas, one of which, the Ukaguru Mountains, was practically unknown zoologically, and the other, the Ulugurus, was looked upon as a promising region for further investigation, as it was the home of several endemic species of birds.

The expedition departed from Nairobi, Kenya, on January 2, 1964. It traveled south to Arusha and then east to Moshi. The party moved directly to the Uluguru Mountains by way of Dodoma (Fig. 1). Camp was established at Bunduki, at an elevation of 5,018 feet, in the Ulugurus, on January 6, 1964, and the expedition collected in and around that spot until January 15, when camp was moved to Mandege, elevation 5,300 feet, in the Ukaguru Mountains (Fig. 2). Field work in the Mandege area commenced on January 17, and continued through January 22. From Mandege, the expedition retraced its route toward Arusha by way of Dodoma, stopping for three days at Babati (January 24-26 inclusive) and then proceeded north to the Lake Manyara area. Arriving in the Lake Manyara area on January 2, the expedition left the Dodoma-Arusha road at Kwa ku chinga, and moved westward toward Lake Manyara. Field work there was terminated on January 29, and the expedition departed for Nairobi on January 30, arriving there on January 31, 1964.

<sup>1</sup>Director, Los Angeles County Museum.

<sup>2</sup>Senior Curator of Ornithology, Los Angeles County Museum.

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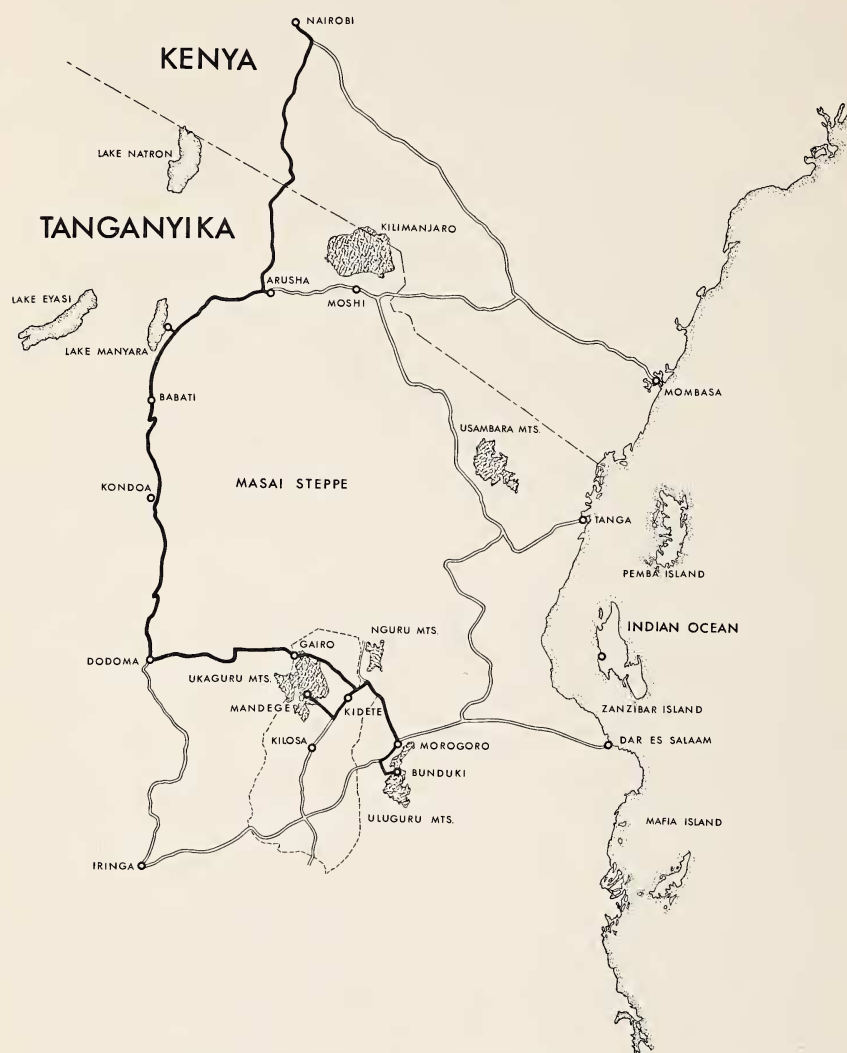


Figure 1. Map showing location of the Uluguru and Ukaguru Mountains. Heavy black line indicates route taken by expedition.



Expedition personnel consisted of William J. Cheney, sponsor; Kenneth E. Stager, ornithologist; Julian McKeand, professional white hunter and his African staff of twelve men. Two trained specimen preparators from the Coryndon Museum of Nairobi were provided by Mr. John G. Williams.

While the specimens of greatest scientific interest in the present collection are those obtained in the two mountain ranges, the expedition made every effort to collect lowland birds in other areas, particularly on the east side of Lake Manyara and near Babati. The following annotated catalog contains all the birds obtained; in most cases the lowland forms call for only slight comment.

For arranging the loan of specimens needed for comparative purposes in the course of the recent study, grateful acknowledgments are due to M. A. Traylor, of the Chicago Natural History Museum, and to R. A. Paynter, of the Museum of Comparative Zoology, Harvard University. A few puzzling specimens were taken to the United States National Museum by the senior author and were compared with material there. Mrs. B. P. Hall, of the British Museum (Natural History), kindly supplied information about specimens in that institution, collected by Fuggles-Couchman and by Swynnerton. Mr. J. F. Pollard, Regional Forest Officer at Morogoro, Tanganyika, kindly sent for our use a copy of an unpublished forestry report on the Ukaguru Mountains. During its work in Tanganyika, the expedition was given much appreciated assistance and advice by Mr. John G. Williams, ornithologist of the Coryndon Museum, Nairobi, Father J. V. Doorne of the Catholic Mission at Bunduki, and Mr. A. J. Mence, Chief Game Warden, Game Division, Tanganyika, at Dar es Salaam. The maps illustrating the present report were drawn by Mrs. Dorothy Kresch of the Los Angeles County Museum's division of exhibitions.

The main acknowledgment the Museum has to make in this connection is, however, to the generous sponsors of the expedition, Mr. William J. Cheney, and his mother, Mrs. Eva F. Cheney, who made possible the results which have enriched the Museum and have contributed to the advancement of our knowledge of the zoology of a fascinating part of the continent of Africa. The Cheneys not only assumed the cost of the expedition but also provided the funds for the publication of this report on its work.

The way in which joint reports, such as this, come to be written often reverses the relative importance of the contributions of the authors. The junior author made the collection, supplied the field notes and the photographs. The senior author is responsible for the identifications, systematic notes, the historical introduction, and the compiled lists of the birds of the Uluguru and Ukaguru Mountains. Each author read and approved the parts written by the other.

A very few specimens of birds from the Uluguru Mountains reached European museums in the last decade of the nineteenth century, collected by Stuhlmann, who sent them to the museum of Berlin, but no special report was ever made on them. Some of them, involving 14 species, were mentioned in various of Reichenow's publications (1889, 1894, 1895, 1900-1905). Stuhl-

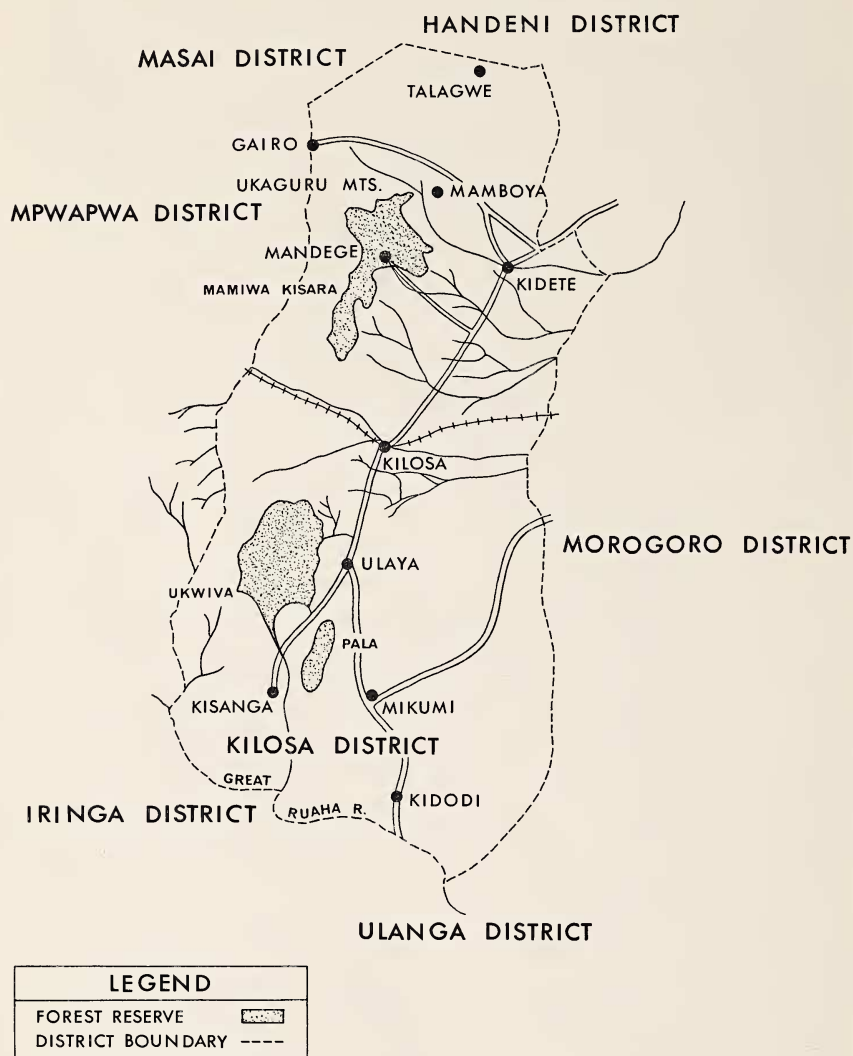


Figure 2. Map showing location of Mandege in the Kilosa forest district.



Figure 3. Uluguru Mountains, showing remnant cap of indigenous mountain forest. Near Bunduki, 1964.

mann seems to have collected chiefly, if not only, in the eastern portion of the Ulugurus. The only explicit locality of his there, known to us, is Mhonda, mentioned as the source of one of his specimens, by Reichenow (1889).

The next person to have collected and observed birds in these mountains was Ludwig Schuster. Schuster's data and specimens were gathered in 1913, but were not published by him until 1926. He mentioned some 14 kinds of birds from the Uluguru Mountains, but as his paper was a general survey of all his work in many parts of Tanganyika it is quite possible that in some cases of wide ranging species he may have had Uluguru records but saw no particular need to mention them. Schuster's collecting localities in the Ulugurus included Bunduki, where the Cheney expedition worked, and also Nyandiduma, Mamba, in the western part of the range, and Mseru at the eastern end.

Arthur Loveridge visited the Uluguru Mountains at least as early as November, 1918, when he found a nest of a paradise flycatcher there, which he reported on some years later (1922:846). C. M. F. Swynnerton collected some birds in the Ulugurus in June, 1920, but the only published information on what he obtained is the mere mention by Sclater and Moreau (1933:198, fn.) of an example of a shrike, *Chlorophoneus nigrifrons*, taken by him there. However, through the kind cooperation of Mrs. B. P. Hall, we have learned that the British Museum received 69 specimens of 37 species of Uluguru birds from Mr. Swynnerton.

Serious ornithological exploration of this mountain range may be said to have begun as recently as 1921 and 1922. During those two years Salimu bin Asmani (or Salimu Asumani), a trained native collector employed by Arthur Loveridge, made the first sizable Uluguru collections, chiefly around the village of Bagilo, which was his home. These birds, representing 98 species, are now





Figure 4. Uluguru Mountains, showing encroachment of human cultivation on the mountain forest. The stands of *Eucalyptus* and conifers in the foreground are experimental plantings at the forestry station, Bunduki, 1964.

largely in the Museum of Comparative Zoology at Harvard University, where they came as part of the large Loveridge East African collection, which was reported on as a whole by Friedmann and Loveridge (1937). Some years earlier a selected number of Uluguru specimens had been given by Loveridge to the late Lord Rothschild's museum at Tring, and a few of them were published on by Hartert (1922, 1923). These specimens are now in the American Museum of Natural History, in New York.

In 1926 Loveridge made a further, extensive collection in both the Ulugurus and the Usambaras, with particular attention to the reptiles and amphibians of the two ranges, whose faunal affinities he wished to study. The Uluguru and the Usambara Mountains are separated by over 120 miles of low, hot, acacia-dotted grasslands, while the Nguru Mountains form a connecting area between them. The report on the cold-blooded terrestrial vertebrates by Barbour and Loveridge (1928) revealed that both the Usambaras and the Ulugurus included in their faunas many species of reptiles and amphibians common to the West African forests. This was more noticeably the case in the Usambaras; the Ulugurus were found to support numerous forms with obvious



Figure 5. Ukaguru Mountains. View is to the south from Mandege. Plantings on the lower slopes are introduced tree species on forestry service experimental plots.

links with the fauna of the Nyika Plateau of Nyasaland to the southwest. Included in the introduction to the report are useful ecological notes on the Uluguru collecting localities, but Loveridge and his assistant, Salimu, did not work at Bunduki, the area where the Cheney expedition made its collection. Although his primary objective was to study the cold-blooded terrestrial vertebrate fauna, Loveridge was able to assemble a very important, large and most interesting collection of 77 species of birds, which was reported on by



Figure 6. Ukaguru Mountains, looking southeast along the Jakulu river valley from Mandege. Foothills in the background are covered with poor *Brachystegia* forest.



Friedmann (1927, 1928). During the course of the field work on this trip, Loveridge and his assistant, Salimu, collected a number of new birds, the most surprising of which was a very distinct new species of large bush-shrike, subsequently named *Malaconotus alius*. In the early 1950's, a sisal planter near Morogoro, Mr. Th. Andersen, made occasional collecting trips into the nearby Ulugurus and supplied a few specimens of the new bush-shrike and other birds to the museums of Nairobi, Copenhagen, Hamburg, Bremen, and New York, but no report has ever been made on his birds.

In 1937, R. E. Moreau spent some time in the Kibungu forest, elevation 900 feet, at the eastern foot of the Ulugurus, and also in the Kinole forest in the northern part of the range, where he discovered a most remarkable, wholly unexpected, new genus and species of warbler, *Scepomycter winifredi*. In the middle 1940's, Moreau sent his collector, Charles Abdallah, to get additional specimens of this most intriguing new find, in which he was successful. J. G. Williams of the Coryndon Museum, Nairobi, also paid short visits to these mountains to collect specimens of the endemic birds for his institution.

The Uluguru Mountains achieved something of a reputation as a promising source of novelties and rarities as a result of these finds. When, in 1963, Mr. William J. Cheney, a generous friend of the Los Angeles County Museum, proposed to sponsor a collecting trip to eastern Africa for the Museum, the Uluguru Mountains, site of the most distinct recent discoveries in tropical East African ornithology, was suggested as a worthwhile area for further work. Although his own personal interest was more in big game hunting, and the Ulugurus were not known to be a particularly good place for that, Mr. Cheney graciously consented to the idea of going there, and of making the expedition primarily ornithological. From the very beginning, he had intended to collect as many birds as possible, as he had invited his friend, K. E. Stager, the Museum's senior curator of birds, to accompany him.

While the present report deals particularly with the birds brought back by the Cheney expedition, it includes also a summary-compilation of the results of all earlier collections as far as the data were available to us. This is given as a mere listing of the presently known avifauna of the Uluguru Mountains. That of the Ukagurus, based on the present collection and the handful of species obtained by Fuggles-Couchman, is, of course, much less complete. The absence from the latter list of many of the birds present in the Ulugurus cannot be interpreted as definite evidence that they do not occur in the Ukagurus, except as in such cases as *Apalis flavigularis*, where we know that the race *griseiceps* occurs in the Ukagurus and *uluguru* in the range from which it derives its name, and *Pycnonotus tephrolaemus*, which is represented in the Ulugurus by the race *neumanni* and in the Ukagurus by *chlorigulus*.

The only mention in print of any birds from the Ukaguru Mountains is in Fuggles-Couchman's account (1939) of birds collected or observed by him during a six year sojourn in the Eastern Province of Tanganyika. During the course of this residence he visited both the Ulugurus and the Ukagurus, as well

as the Ngurus and the Usagaras. Fuggles-Couchman mentioned only six birds from the Ukagurus, but Mrs. B. P. Hall has informed us of a seventh, of which a specimen was sent by him from there to the British Museum. His list of Ukaguru birds, which constituted all that was known prior to the Cheney expedition's work, is as follows:

*Tauraco livingstonii cabanisi*  
*Viridibucco simplex*  
*Pycnonotus tephrolaemus chlorigulus*  
*Alseonax adustus roehli*  
*Batis capensis mixta*  
*Laniarius fülleborni*  
*Cinnyris moreaui*

Of these, Fuggles-Couchman's specimen of *Alseonax adustus roehli* was probably the basis of the only mention of the Ukaguru Mountains in Mackworth-Praed and Grant (1957:167). His example of *Tauraco livingstonii cabanisi* was similarly the basis for Moreau's (1958:95) listing of this locality for that bird.

Fuggles-Couchman has given a convenient description of the whole area, based in part on the Tanganyika government's Land Development Survey's report for 1929-1930. From it we may extract the following, "... The province contains three important ranges of mountains, the island group of Uluguru and Nguru and the ranges of the Ukaguru and Usagara, which form one long range running along the western boundary of Kilosa District ...

"The Uluguru and Nguru Mountains are the highest ranges in the province, the Uluguru reaching 9000 feet. Both ranges have extensive areas of temperate rain-forest on them ... Small areas of tropical forest exist at the eastern foot of the Ulugurus in the upper reaches of the Ruvu River ... The Ukaguru, Usagara, and Uvidunda Mountains are somewhat similar, but do not contain such large areas of rain-forest, much of what there is appearing to be of secondary growth. Below is the similar long grass country found on the Ulugurus ... The rainfall decreases from the coastal belt inland, becoming as low as 39.2 inches at Morogoro, at 1600 feet, while at the eastern foot of the Ulugurus it rises to 56 inches."

To the above we may add some further data, on the Ukaguru Mountains, extracted and summarized from an unpublished, typewritten report on the mountain forests of the Kilosa District, submitted to the Ministry of Lands and Surveys, Forest Division, at Morogoro, by J. McCarthy in 1963. The area involves part of a large mountain chain to the north and west of Kilosa Township, which levels off to the north-east where it flattens out into the Dodoma Plateau, while forming the high ridge of the Kilombero Escarpment to the south and west. Between these points is the Usagara area, which is roughly separated into two main mountain masses by the intersecting valleys of the



Mdukwe and Mkondoa Rivers. To the north is the Ukaguru mass, containing the forest reserves of Talagwe, Mamboya, Ikwamba, Uponera, Mamboto, and Mamiwa Kisara. The first two are isolated peaks and are essentially outliers of the main Ukagurus. To the south is the Rubeho mass, containing the Ukwiva Forest Reserve. The total area comprises some 235 square miles of which nearly 175 square miles form the Ukwiva Forest Reserve. The altitude of the Ukagurus ranges from 4000 to 7000 feet with a general average of 6500 feet, but the rise is impressive because of the fact that the range rises from a low plateau of not more than 1000 feet. Up to about 4000 feet the vegetation is largely poor *Brachystegia* woodland flora, but above that altitude it is generally montane rain forest, or more accurately, mist belt forest, as it does not have the lush, luxuriant growth of lowland primary rain forest. The forest canopy is rarely closed completely, but the density of the lower trees and shrubs allows little light to penetrate to the ground. Tree growth in this forest is usually poor with heights between 30 and 60 feet in most cases. On the moister slopes the forest is largely composed of *Albizia* trees, while on the drier parts trees of the genera *Myrica* and *Macaranga* are dominant. On the very steepest slopes on the higher reaches of the mountain streams the Ukindu palm, *Phoenix reclinata*, is common, while in the lower valleys the most numerous tree is *Newtonia buchanani*.

The upper reaches of the Ukaguru forests harbor a variety of game mammals, particularly elephants, buffaloes, pigs, and baboons; also leopards, monkeys, occasional lions (in the drier foothills), rock rabbits, tree rats and squirrels.

At Mandege, where records of rainfall have been kept, the annual precipitation varies between 55 and 80 inches, with an average of 60 inches, as compared with a rainfall of 30 to 50 inches in the Rubeho Mountains to the south-east. On the whole the precipitation in the Ukagurus appears to be fairly similar to that in the Uluguru, and the general aspect of the montane forest in the two groups of mountains is similar.

This may be seen from the photographs illustrating this paper; figures 3 and 4 show the Uluguru, figures 5 and 6 the Ukagurus.

In the following lists of the birds of the Uluguru and of the Ukaguru Mountains, respectively, the linear order and the nomenclature follows that of Mackworth-Praed and Grant (1955, 1957), except in the case of families subsequently revised in the continuation of the check-list of birds of the world, commenced by the late J. L. Peters, and in the case of recent descriptions of new forms. In the Uluguru list there are some birds, recorded in the literature as being from that mountain mass, which are lowland species that probably were collected only at the base of the mountains. The order and nomenclature of these lists is also used in the annotated catalog of the present collection. In those species where some differences of opinion or some doubts seem justified, these are expressed in the text. It seems better to handle matters in this manner for ready reference.

## a. Birds recorded from the Uluguru Mountains.

*Phalacrocorax africanus africanus*  
*Scopus umbretta bannermani*  
*Falco tinnunculus tanganyikae*  
*Francolinus hildebrandti hildebrandti*  
*Coturnix coturnix africana*  
*Numida mitrata reichenowi*  
*Guttera pucherani*  
*Sarothrura rufa*  
*Sarothrura elegans*  
*Tringa hypoleucos*  
*Columba arquatrix arquatrix*  
*Turturaena delegorguei sharpei*  
*Streptopelia semitorquata semitorquata*  
*Tympanistria tympanistria fraseri*  
*Aplopelia larvata larvata*  
*Treron australis brevicera*  
*Cuculus solitarius solitarius*  
*Cerococcyx montanus patulus*  
*Ceuthmochares aereus australis*  
*Tauraco livingstonii cabanisi*  
*Megaceryle maxima maxima*  
*Alcedo semitorquata*  
*Halcyon albiventris orientalis*  
*Halcyon chelicuti chelicuti*  
*Melittophagus pusillus meridionalis*  
*Bycanistes bucinator*  
*Bycanistes brevis*  
*Glaucidium capense scheffleri*  
*Colius striatus cinerascens*  
*Apaloderma narina narina*  
*Heterotrogon vittatum vittatum*  
*Lybius torquatus irroratus*  
*Buccanodon leucotis leucogrammicum*  
*Buccanodon olivaceum olivaceum*  
*Viridibucco leucomystax*  
*Pogoniulus bilineatus bilineatus*  
*Trachyphonus erythrocephalus erythrocephalus*  
*Campethera cailliautii cailliautii*  
*Campethera abingoni abingoni*  
*Dendropicos fuscescens hartlaubii*  
*Mesopicos griseocephalus kilimensis*  
*Smithornis capensis medianus*

*Motacilla clara torrentium*  
*Anthus lineiventris*  
*Turdoides jardinei kirki*  
*Malacocincla rufipennis distans*  
*Alcippe abyssinica stierlingi*  
*Pycnonotus barbatus micrus*  
*Pycnonotus masukensis roehli*  
*Pycnonotus virens zombensis*  
*Pycnonotus tephrolaemus neumanni*  
*Pycnonotus milanjensis striifacies*  
*Phyllastrephus cerviniventris*  
*Phyllastrephus debilis rabai*  
*Phyllastrephus fischeri placidus*  
*Nicator gularis*  
*Suaheliornis kretschmeri kretschmeri*  
*Muscicapa striata neumanni*  
*Alseonax adjustus fülleborni*  
*Alseonax cinereus cinereolus*  
*Dioptrornis fischeri nyikensis*  
*Chloropeta natalensis*  
*Chloropeta similis*  
*Chloropetella holochlora*  
*Batis capensis mixta*  
*Platysteira peltata peltata*  
*Trochocercus cyanomelas bivittatus*  
*Trochocercus albonotatus albonotatus*  
*Tchitrea suahelica suahelica*  
*Turdus abyssinicus nyikae*  
*Zoothera gurneyi otomitra*  
*Neocossyphus rufus rufus*  
*Cercomela familiaris falkensteini*  
*Thamnolaea cinnamomeiventris subrufipennis*  
*Saxicola torquata promiscua*  
*Cossypha heuglini heuglini*  
*Cossypha natalensis*  
*Cossypha caffra iolaema*  
*Modulatrix stictigula stictigula*  
*Déssornis anomala grotei*  
*Sheppardia sharpei sharpei*  
*Alethe fülleborni usambarae*  
*Pogonocichla stellata orientalis*  
*Sathrocercus mariae usambarae*  
*Seicercus ruficapillus minullus*  
*Seicercus umbrovirens fuggles-couchmani*

*Calamonastes simplex undosus*  
*Schoenicola brevirostris alexinae*  
*Apalis flavigularis uluguru*  
*Apalis melanocephala moschi*  
*Apalis caniceps tenerrima*  
*Apalis chariessa*  
*Apalis porphyrolaema*  
*Apalis bamendae chapini*  
*Artisornis metopias*  
*Scepomycter winifredae*  
*Camaroptera brachyura fuggles-couchmani*  
*Cisticola woosnami schusteri*  
*Cisticola cantans pictipennis*  
*Cisticola erythrops sylvia*  
*Cisticola natalensis valida*  
*Cisticola brachyptera isabellina*  
*Prinia subflava tenella*  
*Melocichla mentalis orientalis*  
*Hirundo angolensis angolensis*  
*Hirundo daurica emini*  
*Hirundo abyssinica unitatis*  
*Ptyonoprogne fuligula rufigula*  
*Psolidoprocne holomelaena holomelaena*  
*Psolidoprocne orientalis orientalis*  
*Campephaga sulphurata*  
*Campephaga quiscalina münzerni*  
*Coracina caesia pura*  
*Dicrurus ludwigii ludwigii*  
*Dryoscopus cubla nairobiensis*  
*Tchagra minuta reichenowi*  
*Tchagra senegala orientalis*  
*Laniarius ferrugineus sublacteus*  
*Laniarius fülleborni ulugurensis*  
*Laniarius funebris funebris*  
*Telophorus nigrifrons nigrifrons*  
*Telophorus quadricolor nigricauda*  
*Malaconotus alius*  
*Oriolus oriolus oriolus*  
*Oriolus chlorocephalus amani*  
*Lamprocolius chalybeus sycobius*  
*Onychognathus walleri walleri*  
*Onychognathus morio rüppellii*  
*Onychognathus tenuirostris theresae*



*Stilbopsar kenricki kenricki*  
*Zosterops senegalensis stierlingi*  
*Zosterops winifredae*  
*Nectarinia famosa cupreonitens*  
*Cinnyris venustus falkensteini*  
*Cinnyris loveridgei*  
*Cyanomitra olivacea alfredi*  
*Anthreptes collaris elachior*  
*Anthreptes neglectus*  
*Amblyospiza albifrons montana*  
*Ploceus bertrandi*  
*Ploceus ocularius suahelicus*  
*Ploceus subaureus aureoflavus*  
*Ploceus bicolor kersteni*  
*Quelea erythropus*  
*Quelea quelea aethiopica*  
*Euplectes hordeacea hordeacea*  
*Euplectes gierowii friederichseni*  
*Euplectes nigroventris*  
*Euplectes capensis crassirostris*  
*Euplectes ardens ardens*  
*Spermestes nigriceps nigriceps*  
*Pirenestes minor*  
*Pirenestes frommi*  
*Cryptospiza reichenovii australis*  
*Cryptospiza salvadorii kilimensis*  
*Mandingoa nitidula chubbi*  
*Lagonosticta rubricata haematocephala*  
*Coccyzygia melanotis kilimensis*  
*Estrilda astrild cavendishi*  
*Vidua funerea nigerrima*  
*Vidua macroura*  
*Linurgus olivaceus kilimensis*  
*Carduelis citrinelloides hypostictus*  
*Emberiza orientalis orientalis*  
*Emberiza flaviventris flaviventris*

To the above we may add the following species from a list kindly sent us by Mr. Th. Andersen of the birds his native collectors obtained for him in the Ulugurus. These are mentioned here rather than in the main list because as far as we know the specimens have not been examined by an experienced ornithologist. Mr. Andersen's list contained a few additional species whose identifications seemed open to question, and which it seemed better to leave out until they could be examined carefully.

*Anas sparsa*  
*Milvus migrans parasitus*  
*Lophoaetus occipitalis*  
*Cuncuma vocifer*  
*Accipiter melanoleucus*  
*Accipiter badius* subsp.  
*Accipiter tachiro sparsimfasciatus*  
*Gallinula chloropus meredionalis*  
*Charadrius hiaticula tundrae*  
*Charadrius squatarola*  
*Rostratula benghalensis*  
*Capella gallinago*  
*Tringa nebularia*  
*Turtur afer*  
*Cuculus poliocephalus* subsp.  
*Cuculus clamosus*  
*Clamator glandarius*  
*Chrysococcyx caprius*  
*Chrysococcyx klaas*  
*Gallirex porphyreolophus chlorochlamys*  
*Gymnoschizorhis personata leopoldi*  
*Merops boehmi*  
*Upupa africana*  
*Caprimulgus europaeus* subsp.  
*Caprimulgus fossii*  
*Semeiophorus vexillarius*  
*Pogoniulus pusillus affinis*  
*Indicator exilis exilis*  
*Apus apus* subsp.  
*Anthus trivialis trivialis*  
*Argya rubiginosa heuglini*  
*Pycnonotus importunus* subsp.  
*Phyllastrephus flavostriatus* (*kungwensis*?)  
*Platysteira peltata peltata*  
*Tchitreia viridis ferreti*  
*Apalis murina* subsp.  
*Tchagra australis minor*  
*Malaconotus blanchoti blanchoti*  
*Oriolus oriolus oriolus*  
*Oriolus auratus notatus*  
*Cinnyris shelleyi hofmarnni*  
*Anthreptes longuemarei orientalis*  
*Anthreptes rectirostris tephrolaema*  
*Amauresthes fringilloides*

*Hypargus niveoguttatus*  
*Estrilda subflava clarkei*  
*Stegamura paradisaea*

b. Birds recorded from the Ukaguru Mountains

*Turturoena delegorguei sharpei*  
*Aplopelia larvata larvata*  
*Cuculus poliocephalus poliocephalus*  
*Cuculus solitarius solitarius* (no specimen records)  
*Cercococcyx montanus patulus*  
*Tauraco livingstonii cabanisi*  
*Heterotrogon vittatum vittatum*  
*Viridibucco simplex*  
*Viridibucco leucomystax*  
*Dendropicos fuscescens harlaubii*  
*Motacilla clara torrentium* (no specimen records)  
*Pseudoalcippe abyssinicus stierlingi*  
*Pycnonotus barbatus micrus*  
*Pycnonotus masukensis roehli*  
*Pycnonotus tephrolaemus chlorigulus*  
*Pycnonotus milanjensis striifacies*  
*Phyllastrephus fischeri placidus*  
*Alseonax adustus roehli*  
*Dioptrornis fischeri nyikensis*  
*Batis capensis mixta*  
*Trochocercus albonotatus albonotatus*  
*Geokichla gurneyi raineyi*  
*Cossypha caffra iolaema*  
*Modulatrix stictigula stictigula*  
*Alethe fulleborni usambarae*  
*Pogonocichla stellata orientalis*  
*Sylvia atricapilla*  
*Sylvia borin*  
*Sathrocercus mariae usambarae*  
*Phylloscopus trochilus acredula*  
*Apalis flavigularis griseiceps*  
*Scepomycer winifredae* (no specimen records)  
*Psolidoprocne holomelaena holomelaena* (no specimen records)  
*Laniarius fülleborni uluguruensis*  
*Chlorophoneus nigrifrons*  
*Corvultur albicollis*  
*Zosterops senegalensis stierlingi*  
*Cinnyris mediocris moreau*  
*Cyanomitra olivacea alfredi*

*Anthreptes collaris elachior*  
*Cryptospiza reichenovii australis*  
*Coccopygia melanotis kilimensis*  
*Carduelis citrinelloides hypostictus*

As already mentioned, present knowledge of the bird life of the Ukaguru Mountains is too incomplete to permit an analysis of the similarities and differences it reveals with respect to that of the Uluguru Mountains. The following few examples may be mentioned, as they seem significant.

*Alseonax adustus*: represented in the Ulugurus by the race *fülleborni*; in the Ukagurus by the race *roehli*.

*Pycnonotus tephrolaemus*: represented in the Ulugurus by the race *neumanni*; in the Ukagurus by the race *chlorigulus*.

*Apalis flavigularis*: represented in the Ulugurus by the race *uluguru*; in the Ukagurus by the race *griseiceps*.

*Scepomycter winifredii*: known definitely only from the Ulugurus; sight record only from the Ukagurus.

*Cinnyris loveridgei*: known from the Ulugurus, not from the Ukagurus.

*Cinnyris mediocris moreaui*: known from the Ukagurus, not from the Ulugurus.

## ANNOTATED LIST OF SPECIMENS

### FAMILY SCOPIDAE

#### *Scopus umbretta bannermani* C. H. B. Grant

One male was collected at Bunduki, Uluguru Mountains, on January 14. The hammerkop had not been recorded previously from this mountain mass, although it is known from numerous Tanganyikan localities. The above specimen was the only individual of this species observed at Bunduki.

### FAMILY SAGITTARIIDAE

#### *Sagittarius serpentarius* (J. F. Miller)

One adult female was collected on the east side of Lake Manyara, on January 28. It weighed 8 pounds and was in very abraded plumage and was in an active stage of replacement of the body feathers. Its crop contained one snake, one lizard, one frog, and seven grasshoppers. On January 28 another specimen, an adult male, was taken.

### FAMILY ACCIPITRIDAE

#### *Necrosyrtes monachus pileatus* (Burchell)

The hooded vulture is represented in the collection by one male taken on the east side of Lake Manyara, on January 28. It had the testes slightly enlarged.



*Milvus migrans parasitus* (Daudin)

An adult female yellow-billed kite was collected 5 miles north of Morogoro on January 5. The bird was feeding in the center of the road when it was hit and killed by one of the expedition's vehicles.

*Aquila rapax rapax* (Temminck)

The tawny eagle was found along the eastern side of Lake Manyara where two males were collected on January 28 and 29. One of them was noted as having the gonads slightly enlarged. The northern race *raptor* is less rufescent in all plumage stages than in nominate *rapax*, but the difference is not invariable. Tanganyikan specimens are of the southern race *rapax* while the southern and central Kenya birds are intermediate but nearer to the typical form than to *raptor*.

*Melierax gabar* (Daudin)

A male with somewhat enlarged gonads was collected on the east side of Lake Manyara on January 29. This is probably the commonest of the small hawks of eastern Africa, and occurs in two color phases—a pale gray bird, such as the present specimen, and a black plumaged one.

## FAMILY FALCONIDAE

*Polihierax semitorquatus castanotus* (Heuglin)

One male was collected on the east side of Lake Manyara, on January 28.

## FAMILY PHASIANIDAE

*Francolinus sephaena grantii* Hartlaub

One male of this francolin was taken on January 28 on the east side of Lake Manyara. This is one of the common birds of the East African plains country.

*Pternistes leucoscepus infuscatus* Cabanis

Two specimens, one of each sex, were obtained on January 28, on the east side of Lake Manyara. The conclusions of Hall (1963:129) have been accepted as a guide in studying and identifying these birds subspecifically.

## FAMILY NUMIDIDAE

*Numida mitrata reichenowi* Ogilvie-Grant

Two males of the East African helmeted guinea fowl were collected on January 13, 2 miles east of Mlali, at the west foot of the Uluguru Mountains.

The allocation of these specimens to the race *reichenowi* is a matter of conforming to recent usage. It is not yet settled whether the proposed race *uhehensis* Reichenow, may prove to be separable. In an earlier comment on

Uluguru guinea fowl, Friedmann (1928:76) referred examples from that mountain range to *uhehensis* because they all had short, bluntly pyramidal bony helmets, whereas specimens of typical *reichenowi* had the helmet much longer. The present examples agree in this respect with the three Uluguru birds discussed in the 1928 paper, and the uniformity of the two series argues for further consideration of the validity of *uhehensis*. Unfortunately, no pertinent material from elsewhere in its supposed range has been available for study. It may be noted that van Someren (1922:25) considered that a specimen from Makindo, Tanganyika, might be of that race.

#### FAMILY OTIDIDAE

##### *Eupodotis senegalensis canicollis* (Reichenow)

A male with slightly enlarged testes was collected on the east side of Lake Manyara, on January 28.

#### FAMILY CHARADRIIDAE

##### *Hoplopterus armatus* (Burchell)

On January 28, an adult female blacksmith plover was collected on the east side of Lake Manyara.

#### FAMILY SCOLOPACIDAE

##### *Tringa hypoleucos* Linnaeus

One example of this European migrant, a female, was collected at Bunduki, Uluguru Mountains, on January 14. The specimen was secured from a mist net set over the stream that flows through Bunduki.

#### FAMILY GLAREOLIDAE

##### *Glareola pratincola fülleborni* Neumann

Two specimens, one male, one female, were obtained on January 28, on the east side of Lake Manyara. The species was abundant on the mud flats along the shore of Lake Manyara.

#### FAMILY PTEROCLIDAE

##### *Eremialector decoratus loveridgei* Friedmann

Two females, taken on the east side of Lake Manyara, on January 27, agree with the characters of this race, originally described from Dodoma, farther south in Tanganyika. The species was relatively abundant and encountered singly or in pairs.

#### FAMILY COLUMBIDAE

##### *Cuculus poliocephalus poliocephalus* Latham

One adult male and one immature male were taken at Bunduki, Uluguru Mountains, January 7 and 14. The immature specimen has the bill dusky, not

yellow as in the adult, has the mantle and abdomen paler, the breast more barred with terminal whitish transverse tips on the feathers, and the upper wing coverts more streaked with whitish.

Olive pigeons were common about Bunduki and frequented the tops of the tall *Eucalyptus* that had been introduced in the area.

*Turturoena delegorguei sharpei* Salvadori

One female was obtained at Mandege, Ukaguru Mountains, on January 22. An earlier record from the Ulugurus is one from Bagilo (Friedmann, 1928). The Mandege specimen was secured by mist net in heavy secondary forest growth.

*Streptopelia decipiens perspicillata* Fischer and Reichenow

One adult male of this pigeon was taken on January 27, on the east side of Lake Manyara where it was found to be a common species.

*Streptopelia capicola tropica* Reichenow

One adult male was taken on the east side of Lake Manyara, January 27. A common species in this area.

*Stigmatopelia senegalensis aequatorialis* (Erlanger)

One female was collected on January 26, on the east side of Lake Manyara, 60 miles south of Arusha. A common species of the plains country.

*Aplopelia larvata larvata* Temminck and Knip

One female was collected at Mandege, Ukaguru Mountains, January 20. This dove was previously known from two localities in the Ulugurus; Bagilo and Nyange.

This lemon dove was netted in dense secondary forest, but escaped and flew to the base of a nearby tree where it sought refuge underground in an earthen hole. The bird was then captured by hand from this dark hole.

FAMILY CUCULIDAE

*Cuculus poliocephalus poliocephalus* Latham

A single specimen, a female taken at Mandege, Ukaguru Mountains, January 21, 1964, presents some unusual features. It is small, wing 140 mm., tail 125; culmen from cere 17.5 mm., and is unusually rufescent, the forehead, crown, occiput, back, and upper wing coverts being bright rufous barred with black with faint greenish gloss, while the rump and upper tail coverts are more uniformly dark rufescent, almost bay, with subdued blackish bars. It is considerably darker on the posterior upper parts than comparable examples from India.

The subspecific identification is based on the small size of the specimen which agrees thereby with nominate *poliocephalus* rather than with *rochii*. This is in line with the findings of Grant and Mackworth-Praed (1936:131-133) and of Moreau and Moreau (1937:163-164), who found the Indian bird to be a more frequent visitor to eastern Africa than the Madagascan race. Other Tanganyikan records for this cuckoo range from late November to nearly the middle of April, with the majority in March and April.

*Cuculus solitarius solitarius* Stephens

At Bunduki, Uluguru Mountains, two males and one female were collected January 7 to 9, 1964. The female had a much enlarged ovary and was nearly in breeding condition; one male had the testes only slightly swollen; of the other no observations were noted. The two males weighed 75 grams each. Fuggles-Couchman (1939:82) noted that the red-chested cuckoo usually did not begin calling at lower levels in Tanganyika until the middle of November but that he heard it in "full song" on October 9 at 5,500 feet in the Ulugurus. The condition of the present January female suggests a prolonged breeding season in the Ulugurus.

In January, 1964, cuckoos of this species called continuously throughout the day in the forests of both the Ulugurus and the Ukagurus.

*Cercococcyx montanus patulus* Friedmann

Two males, with slightly enlarged testes, were collected at Mandege, Ukaguru Mountains, January 18 and 20. Both had fairly abraded remiges, the terminal portions being especially frayed. This cuckoo was previously known from the Uluguru Mountains, where the type was collected at Bagilo. The range of *patulus*, now known to include the Ukagurus, extends from the Usambara, Uluguru, and Ukaguru Mountains to south Angoniland, southwest of Lake Nyasa. It is not known from the Ngurus, but may well be found to occur there as well.

The fact that the adult plumage of *montanus* resembles that of the immature stage of the other species of the genus, *mechowi* and *olivinus*, suggests that the present species may be closer to the original *Cercococcyx* stock and that the two western species developed from it.

Both of the above specimens were collected by listening to their loud calls and thereby locating the birds in the tops of forest trees.

*Chrysococcyx klaas klaas* Stephens

One adult male, with gonads slightly enlarged, was taken 5 miles south of Babati, northern Tanganyika, on January 25.

*Ceuthmochares aereus australis* Sharpe

One male was collected at Bunduki, Uluguru Mountains, on January 10; testes slightly enlarged. Previously recorded from the Ulugurus from Mkaraji

by Friedmann and Loveridge (1937), and from the thickets around the foothills of that area by Fuggles-Couchman (1939:83).

The above specimen was collected in dense primary forest on the hills above Bunduki.

#### FAMILY MUSOPHAGIDAE

##### *Tauraco livingstonii cabanisi* (Reichenow)

Three males and two females were collected at Bunduki, Uluguru Mountains, January 7-12. Weights were recorded of 260 grams for one male and 270 grams for one female. This colorful bird is apparently common in the Uluguru forests, where it has been recorded from Bagilo, Nyange, and Nyingwa, as well as now from Bunduki.

In his study of the Musophagidae, Moreau (1958:95) mentioned a specimen of the present species from the Ukagurus. We are informed by Mrs. B. P. Hall that a specimen was collected there by Fuggles-Couchman, and was sent by him to the British Museum. This is probably the same individual.

Livingstone's turacos were equally common in the Uluguru and Ukagurus. They were calling loudly in both mountain ranges, but no specimens were secured at Mandege. At Bunduki, turacos could be isolated in small clumps of forest trees, where they could be collected with ease. In the Ukagurus the forest was more uniformly continuous, making it more difficult to obtain examples of these wary birds.

##### *Gymnoschizorhis personata leopoldi* (Shelley)

One male with somewhat enlarged testes was collected on the east side of Lake Manyara on January 29. Mackworth-Praed and Grant (1957:538) wrote that the breeding season of this Tanganyikan race of the bare-faced go-away-bird, is from September to December. The gonadal condition of the present specimen suggests a later terminal date.

A common species in the scattered Acacia forests east of Lake Manyara.

#### FAMILY CORACIIDAE

##### *Coracias caudatus caudatus* Linnaeus

One adult male, with small testes, was collected on January 28, on the east side of Lake Manyara. This roller is a common bird in the open country of eastern Africa and occurred abundantly in the Lake Manyara area.

#### FAMILY ALCEDINIDAE

##### *Megaceryle maxima maxima* (Pallas)

One adult male and one subadult female were collected on January 7, at Bunduki, Uluguru Mountains. These appear to be the first records of this large kingfisher from that mountain range.



At least three of these large kingfishers were found working the trout-stocked stream at Bunduki and were looked upon with great disfavor by the members of the Uluguru trout fishing club, whose club house is located there.

*Alcedo semitorquata* Swainson

An adult female, taken at Bunduki, January 13, is the first record for the half-collared kingfisher from the Uluguru Mountains. According to Jackson (1938:561) this is a rare bird in Kenya and it may also be uncommon in Tanganyika.

The single specimen of this species secured at Bunduki was taken in a mist net placed across the stream. No other half-collared kingfishers were observed in the area.

*Halcyon albiventris orientalis* Peters

Two examples, one of each sex, collected at Bunduki on January 7 and 8, add the brown-hooded kingfisher to the known avifauna of the Uluguru Mountains. The female is in very abraded plumage, the ends of many of the feathers being worn and frayed. It may have been a bird that had completed its breeding and had not yet begun to enter the post-nuptial molt. The species has been found nesting in November in the coastal belt of northern Tanganyika.

*Halcyon chelicuti chelicuti* (Stanley)

On January 28, an adult male was collected east of Lake Manyara. The striped kingfisher is a wide-spread, common bird throughout most of eastern Africa.

FAMILY BUCEROTIDAE

*Bycanistes brevis* Friedmann

A male, taken at Bunduki, Uluguru Mountains, on January 11, agrees in its small dimensions with topotypical *brevis*. In the years since describing *brevis* as a southern, smaller race of *B. "cristatus"* all the additional material personally examined by the senior author has borne out the distinctness of the two populations, but students of African birds, working chiefly with the material in the British Museum, have equally consistently written as though the species could not be split into geographic races. The present use of a binomial is a concession to current nomenclatural usage, but the matter still seems worthy of reexamination with adequate material. It may be mentioned that van Someren (1932:287) found that his series supported the recognition of a larger, northern, and a smaller, southern race of this hornbill.

Hornbills were noted as uncommon in the Bunduki area during our brief stay there. The large silvery-cheeked hornbills were the only species observed and in each instance they were noted singly and late in the day. They seemed to be feeding below Bunduki, as each bird would appear from down the valley, alight on the tops of certain tall, solitary trees at Bunduki and then fly

on up the mountain to the dense stand of forest. The above listed specimen weighed 1275 grams.

*Tockus erythrorhynchus erythrorhynchus* (Temminck)

One adult male was obtained on the east side of Lake Manyara on January 26. This species and *Tockus deckeni* were both common in the savanna country around Lake Manyara.

*Tockus deckeni* (Cabanis)

One adult male was collected on the east side of Lake Manyara on January 28.

Field studies are badly needed to elucidate the nature of the isolating mechanisms that operate between this species, *jacksoni*, and *erythrorhynchus* in the areas where all three are sympatric. It may be recalled that at one time several not uninformed writers considered *jacksoni* merely the young of *deckeni*. This is mentioned merely to emphasize the similarity in habits and in habitat of the two, but there is no longer any doubt as to their distinctness (see Friedmann, 1930:420-425, for fuller discussion).

FAMILY PHOENICULIDAE

*Phoeniculus purpureus marwitzi* (Reichenow)

One adult male of this kakelaar was collected east of Lake Manyara on January 27. A common species in the Lake Manyara area.

FAMILY STRIGIDAE

*Asio capensis capensis* (A. Smith)

Two specimens, one of each sex, were taken on January 29 east of Lake Manyara. The male is slightly paler than the female. The marsh owl is widely distributed, but local in its occurrence in much of eastern and southern Africa. In Tanganyika it has been recorded only a small number of times, and apparently chiefly in the interior. Moreau and Moreau (1937:170) cited one specimen from the Pangani River, 10 miles east of Korogwe, about 50 miles inland, as the most eastern Tanganyikan record.

Three birds were flushed from the tall savanna grass and two were collected.

*Glaucidium perlatum* (Vieillot)

An adult female of this small owl was taken east of Lake Manyara, on January 27, where the species was noted as common in the large, densely foliated *Acacias*.

FAMILY CAPRIMULGIDAE

*Caprimulgus fossii clarus* Reichenow

One female was obtained 5 miles south of Babati on January 24.

It may be noted that *clarus* is here considered as a race of *fossii*, as sug-

gested by Friedmann (1930:309-312), by Bowen (1931:40-43) and by Chapin (1939:427), and not as a race of *Scotornis climacurus* as suggested by Grant and Mackworth-Praed (1937:18-20). Chapin has pointed out that *C. fossii* and *Scotornis* occur side by side along the middle Congo River, and that the two must therefore be looked upon as species even though one race of *fossii*, *apatelius*, does seem to be intermediate between *C. f. clarus* and *S. climacurus*. In view of the difficulty of taxonomic placement reflected in these divergent treatments it would seem advisable to cease recognizing *Scotornis* as generically distinct from *Caprimulgus*, and the two species should be restudied both in the field and the museum to evaluate their distinctness and the nature of their relationship.

Nightjars were common on the Babati-Dodoma road at night, where the above specimen was hit by one of the expedition vehicles.

#### FAMILY COLIIDAE

##### *Colius striatus cinerascens* Neumann

One male, three females and one unsexed bird were collected at Bunduki, Uluguru Mountains, January 7-8. One of the females was in full breeding condition, having a large egg, partially shelled, in the oviduct; the male showed some gonadal enlargement also. The speckled mousebird appears not to have been recorded before from the Ulugurus, but its presence there was to be expected in view of its very widespread range. The present series agrees with *cinerascens* in having the upper back unbarred and in having dusky, blackish throats. On geographic grounds *cinerascens* is the race that might have been expected to inhabit the unforested parts of the Ulugurus. No comparative material has been available to test the distinctness of *cinerascens* from *kikuyuensis*, or to test whether the race may be separated convincingly from *affinis*. In an earlier study, it was concluded (Friedmann, 1930, p. 321) that *cinerascens* was a synonym of *affinis*.

Colies were common in the marginal vegetation surrounding the native cultivations on the hillsides about Bunduki. They were usually observed in pairs, but small groups of four to five birds were sometimes encountered.

#### FAMILY TROGONIDAE

##### *Heterotrogon vittatum vittatum* (Shelley)

One adult male was collected at Mandege, Ukaguru Mountains, on January 17. Its presence in the Ukagurus is in keeping with its occurrence in the Ulugurus, where a good series was obtained in 1926 by Loveridge at Bagilo, Nyange, Nyingwa, and Vituri (Friedmann, 1928:81).

Trogons were not observed in the Bunduki area of the Ulugurus during our stay there. The above specimen was the only trogon observed or heard in the Ukagurus.

## FAMILY CAPITONIDAE

*Tricholaema lacrymosum lacrymosum* Cabanis

One female was collected 5 miles south of Babati on January 25. It had a somewhat enlarged ovary and would probably have come into breeding condition by the end of the month. No material of *T. l. narokensis* Jackson has been available for comparison but it is not likely that that race, whose validity is doubtful at best, extends from Doiyo Narok to the acacia savannahs around Babati.

*Virdibucco leucomystax* (Sharpe)

One female of this little barbet was collected at Mandege, Ukaguru Mountains, on January 19. The use of the binomial nomenclature used here is in agreement with Mackworth-Praed and Grant (1957:723). Recently Goodwin (1964:212-213) concluded that *leucomystax* and *simplex* are not as closely related as they might seem to be at first glance. He pointed out that the two are at least partly sympatric, that their vocalisms are said to be different, and that although both have a similar olive coloration they differ in the pattern of their head markings and also in size. Goodwin suggested that *leucomystax* and *coryphaeus* are actually much more closely related and may form one superspecies. It may be noted that Fuggles-Couchman (1939:88) identified his Ukaguru bird as *V. simplex*. Loveridge (in Friedmann and Loveridge, 1937:181) collected two examples of *leucomystax* in the Uluguru Mountains. The total present data thus reveal that *leucomystax* occurs in both areas, while *simplex* has been recorded only from the Ukagurus. It will be of interest to see if it is present in the Ulugurus as well.

## FAMILY PICIDAE

*Dendropicos fuscescens hartlaubii* Malherbe

Four examples of the little cardinal woodpecker were obtained as follows: Bunduki, Uluguru Mountains, one male, two females, January 6-13; Mandege, Ukaguru Mountains, one female, January 21. The Mandege specimen has the top of the head and the dorsal bars darker, blacker, than the Bunduki birds and is very slightly larger; wing 88 mm. as compared with 85 mm. in Bunduki females.

*Thripias namaquus namaquus* (Lichtenstein)

One male was collected east of Lake Manyara on January 27.

## FAMILY ALAUDIDAE

*Mirafrja javanica marginata* Hawker

Two males of the singing bush-lark were taken east of Lake Manyara, on January 27 and 28. They agree in size and in coloration with a series from subcoastal Kenya. The nomenclature used here is in accordance with the

usage proposed by Peters (*in* Mayr and Greenway, 1960:4), wherein the group of races formerly considered as a species "*cantillans*" are united with *javanica*.

Singing bush-larks were noted as common in the Lake Manyara area and were encountered daily.

*Mirafra rufocinnamomea torrida* Shelley

A male in breeding condition was shot east of Lake Manyara on January 29. This lark occurs from the Marsabit plains in Kenya, southward to at least Ugogo and central Tanganyika at altitudes of from 2,000 to 5,500 feet.

Flappet larks were common in the Lake Manyara area and the loud cracking sound made during flight could be heard throughout the day.

FAMILY MOTACILLIDAE

*Motacilla clara torrentium* Ticehurst

One male and two females were obtained at Bunduki, Uluguru Mountains, January 9, 10, 14. The male is generally darker slate gray above than the females and also lacks the broad white margins on the inner secondaries and also lacks the whitish spot below the ear-coverts found in the present two females. These differences are probably purely individual as they are not regularly characteristic of male birds. The present specimens constitute the first records for the mountain wagtail from the Uluguru Mountains. The common name, mountain wagtail, is not wholly appropriate, as this species is not restricted to the highlands. However, its preference for rapidly flowing streams does often cause it to live in the hills as it is there that the brooks are more apt to be rapid in their movements.

Although no specimens were secured in the Ukagurus, the species was observed along stream courses at Mandege on several occasions.

FAMILY TIMALIIDAE

*Alcippe abyssinica stierlingi* (Reichenow)

One male was taken at Bunduki, Uluguru Mountains, January 6; five females were collected at Mandege, Ukaguru Mountains, January 18 to 21. The Bunduki specimen had the gonads somewhat enlarged. It is generally agreed that Hartert's proposed race *uluguru* is not distinct (Friedmann, 1928; Moreau, 1940).

All of the above specimens were secured in mist nets set in heavy forest. The species is equally abundant in both the Uluguru and Ukaguru mountains, although only one specimen was taken in the former area.

FAMILY PYCNONOTIDAE

*Pycnonotus barbatus micrus* Oberholser

Five examples of this wide-ranging bulbul were obtained; two males, one female, at Bunduki, Uluguru Mountains, July 10-12; one male, two miles east



of Mlali, west foot of the Uluguru Mountains, January 13; one male, Mandege, Ukaguru Mountains, January 20. All are in fairly worn plumage. This species was not obtained in the Uluguru range by Loveridge in his 1926 visit, although he did collect it in the Usambaras. One cannot put down the suspicion that he met with it in the Ulugurus as well, but by then he may have made no effort to collect it because of its general ubiquity. Schuster (1926:733) not only recorded it there, but even found a nest at Mamba, in the western part of the range, on December 30, 1913.

Yellow-vented bulbuls occur abundantly in the Uluguru Mountains in peripheral vegetation bordering native cultivations. The species did not appear to be as common in the Mandege area, but this may be due to the more forested nature there.

*Pycnonotus tephrolaemus chlorigulus* (Reichenow)

One male and two females of this relatively local bulbul were collected at Mandege, Ukaguru Mountains, on January 18 and 20. They agree with *chlorigulus* in having whitish upper and lower eyelids and in having a conspicuous olive green patch on the throat attenuating laterally to a narrow band connecting with the olive green of the mantle. The presence of *chlorigulus* in the Ukaguru Mountains is of interest, as the race in the Ulugurus is *neumanni*, and it might have been expected that the same race would be found to inhabit both of these relatively adjacent mountainous areas. It is true that Mackworth-Praed and Grant (1955:138) stated the range of *chlorigulus* as extending from the Nguru Mountains to eastern Dodoma, Kilosa, and Iringa, which fairly well encompasses the Ukagurus, but until now it was not known which race, if any, inhabited that particular area.

Fuggles-Couchman (1939:93) obtained a specimen of the bulbul on July 30, at Vingwele, in the Ukagurus, where he frequently heard it in the forest.

The mountain greenbul was rather uncommon in the forest of the Mandege area as only three specimens were obtained. All were secured by mist nets set in heavy forest.

*Pycnonotus milanjensis striifacies* (Reichenow and Neumann)

Four males and three females were collected at Bunduki, Uluguru Mountains, January 6 to 12; two females were taken at Mandege, Ukaguru Mountains, January 18. The specimens from the two mountain ranges are alike in dimensions and in coloration. One of the Bunduki males is immature and is duskier, less yellowish, more greenish, below than are the adults. Judging by the present series and by the fact that Loveridge (*in* Friedmann, 1928:90) also obtained a number of specimens at two localities in the Ulugurus (Bagilo and Nyingwa), it appears that this species is common in that mountain range. Rand (1958:185) noted that Uluguru birds agree closely with others from Kilimanjaro in being slightly more golden than Usambara, Chyulu, and Mt. Meru examples. The present series agrees with his findings.

Bulbuls of this species are equally abundant in the forests of both the Uluguru and the Ukagurus as shown by the large series collected. Next to *Pycnonotus masukensis*, this species was the commonest bulbul caught in the mist nets. Many were captured, and large numbers of them were liberated.

*Pycnonotus masukensis roehlii* (Reichenow)

A good series of this greenbul was collected in both the Uluguru and the Ukaguru Mountains. In the former area 6 males and 6 females were obtained at Bunduki, January 6 to 14; in the latter region, at Mandege, 7 males were taken, January 18 to 22. The subspecies *roehlii* is characterized by the grayish tinge on the sides of the head and the breast, the gray throat, and the circumocular ring of gray.

Although obscure in habits, this bulbul was by far the most frequently-taken bird in the mist nets set in the forests of the Uluguru and the Ukagurus. Large numbers of netted birds were liberated.

*Pycnonotus virens zombensis* (Shelley)

Two specimens, both males, were taken at Bunduki, Uluguru Mountains, January 9 and 10. This form was previously known from Vituri and Nyange in the same mountain area, so it appears that it is a common, widely distributed species there. Rand (*in* Mayr and Greenway, 1960:252) gave the distribution of this race as extending, “. . . north into southern Tanganyika Territory (to foothills of Uluguru Mountains and Mafia Island) . . .” The bird actually occurs well up in the Uluguru, far beyond the “foothills.”

The Little Greenbul was not met with in the Ukagurus and was relatively uncommon at Bunduki in the Uluguru, compared to the preceding two species.

*Phyllastrephus fischeri placidus* (Shelley)

Fischer's greenbul was collected in both the Uluguru and the Ukaguru ranges; at Bunduki, in the former area, one male was obtained on January 8; at Mandege, in the latter range, one male and two females were collected on January 18 and 20. The race *placidus* is a bird of the higher country from the Marsabit area of northern Kenya south to Nyasaland.

FAMILY MUSCICAPIDAE

*Muscicapa striata neumanni* Poche

Two males were obtained, one two miles east of Mlali, west foot of the Uluguru Mountains, January 13, and one east of Lake Manyara, January 27. The former is slightly darker above and may possibly be typical *striata*, but the difference is also within the range of individual variation.

*Alseonax adustus fülleborni* (Reichenow)

A series of five males and three females was obtained at Bunduki, Uluguru Mountains, January 6 to 14. Several of the birds showed signs of

gonadal enlargement. Fuggles-Couchman (1939:94) recorded the species (race *roehli*) from the Ukaguru Mountains, where he obtained a specimen at Vingwele, at 5,000 feet, on June 23. The use of the subspecific name *fülleborni* for the Uluguru population follows that advocated by Mackworth-Praed and Grant (1955). It may be mentioned, however, that in earlier studies (Friedmann, 1928:84; Moreau, 1940:458) it was concluded that the name *subadustus* was the proper allocation.

Dusky flycatchers appeared to be common in the Bunduki area, as specimens were obtained in a variety of plant associations. Some were secured relatively high in forest trees and others from near the forest floor by means of mist nets.

*Aleonax cinereus cinereolus* (Finsch and Hartlaub)

One female, not in breeding condition, was collected at Bunduki, Uluguru Mountains, on January 6. It was in somewhat abraded plumage.

*Bradornis microrhynchus* Reichenow

Two males of this common flycatcher were collected east of Lake Manyara on January 27.

*Dioptrornis fischeri nyikensis* (Shelley)

A good series, collected in both the Uluguru and the Ukaguru ranges, consists of the following specimens: four males and one female, one young male, Bunduki, January 6 to 14; three males and one female, Mandege, January 19 to 22. Chapin (1953:611) stated that *nyikensis* begins to intergrade with nominate *fischeri* in the Mbulu district of Tanganyika, some distance to the north of where the present specimens were taken. The Uluguru and Ukaguru birds show no signs of such intermediacy. The nominate race is characterized by a greater development of the white circumocular area, and is somewhat deeper slate gray on the upperparts. Moreau (1940:458) noted that this flycatcher occurs on most of the suitable mountain groups of central and norther Tanganyika, but appears to be absent from the Usambaras and the South Pare Mountains. Schuster (1926:712) found it common at Bunduki, where he obtained 6 specimens in March, 1913.

An abundant and obvious species at both Bunduki and Mandege. These flycatchers were very active during the early morning hours and readily responded to "squeaking" decoy calls. They frequented the trees and were seldom encountered in nets placed at ground level.

*Melaenornis pammelaina tropicalis* (Cabanis)

One male of this black flycatcher was collected 5 miles south of Babati, on January 25.

*Chloropeta natalensis massaica* Fischer and Reichenow

One female was collected at Bunduki, Uluguru Mountains, January 8. The

single specimen was secured by mist net set in the dense river-bottom vegetation along the stream course at Bunduki.

*Batis capensis mixta* (Shelley)

Specimens collected were as follows: Bunduki, Uluguru Mountains, two adult males, one juvenal male, one adult female, January 11, 12, 1964; Mandege, 5,300 feet, Ukaguru Mountains, six adult males, four adult females, January 18-22, 1964. The examples from the two mountain ranges are alike in coloration and in size of bill and wing. One of the males from Bunduki had the testes slightly enlarged, about 1.5 mm. in length. Fuggles-Couchman (1939:94) recorded this bird from the Ukagurus, where he found it common and collected one at Masenge, at 6,000 feet on October 5. The need for further study with ample material from the various Tanganyikan mountain "islands" is indicated by the findings of Moreau (1940:458) who noted that specimens from the Ulugurus and from Kilimanjaro had longer tails, 35 to 37 mm., while those from the Usambara, Handeni, and Nguru Mountains had tails measuring 30 to 32 mm.

Before realizing the importance of measuring the tail length in the present series all but two pairs of the birds, one pair from the Ulugurus and one from the Ukagurus, were sent on loan to W. J. Lawson of the Durban Museum. The specimens retained here show tail lengths of 34 and 37.2 mm. in the Uluguru examples and 32.7 and 33 mm. in those from the Ukagurus. These figures indicate that the Ukaguru birds agree with those from the Usambara, Handeni, and Nguru Mountains rather than with the Uluguru and Kilimanjaro birds. The birds from all the Tanganyikan highland forests should be measured and all the data brought together before attempting to map these potential races.

These small flycatchers occur commonly in the heavy forests of the Ulugurus and Ukagurus and all of the above specimens were secured close to the forest floor by means of mist nets. It was interesting to note that when the species became entangled in a mist net it was most frequently both a male and a female and the two birds would generally be within six inches of one another. Whether this was due to a male pursuing a female, or that the pair was moving through the forest in close proximity to one another, can only be speculated upon.

*Batis molitor molitor* (Hahn and Küster)

One male was collected on the east side of Lake Manyara, 60 miles south of Arusha, on January 26. It had the testes somewhat enlarged, measuring nearly 2 mm. in length. In assigning this specimen to the nominate race we are following the decision of Mackworth-Praed and Grant (1955:226), who considered *puella* a synonym. However, Chapin (1953:664-665) recognized *puella*, although admitting that there is a band of gradual intergradation with nominate *molitor*, and he gave the range of *molitor* as extending northward from South Africa to Nyasaland and the southwestern side of Lake Tanganyika,



and that of *puella* as encompassing northern Tanganyika to Kenya north to Barsaloi, thus leaving our portion of Tanganyika untreated.

*Trochocercus albonotatus albonotatus* Sharpe

Three females of this flycatcher were collected at Bunduki, Uluguru Mountains, January 10, and at Mandege, Ukaguru Mountains, January 19. One of the specimens is subadult and has the throat dark gray, not black as in the other two. In an earlier report on Loveridge's 1926 Uluguru collection (Friedmann, 1928:85) a series of this species was referred to Grote's subspecies *subcaeruleus* because of close agreement with the supposed characters of that race. In view of subsequent opinion as to the nonvalidity of *subcaeruleus*, the Uluguru population is considered the same as typical *albonotatus*. Chapin (1953:696) found that *subcaeruleus* was a little more bluish gray on the upperparts, but that the difference was slight. He did, however, consider the race might be recognized and that it would be found to occupy the entire Nyasa area as well as the type locality, Mlalo, Usambara.

These small crested flycatchers were only encountered in mist nets set in heavy forest and were not otherwise observed.

*Tchitrea suahelica suahelica* (Reichenow)

At Bunduki, Uluguru Mountains, a series of five males and four females was collected January 6 to 11. The birds were in breeding condition, with much enlarged gonads, except for one female which was in very abraded plumage and may have been through breeding. The others, to judge by their fresher plumage, probably were about to begin to breed. This species was previously known from Tawa, Mamba, and Vituri, in the Ulugurus. Schuster (1926:713) found a nest at Mamba, on December 30, 1913.

An abundant and obvious species in the forest of the Ulugurus. These attractive flycatchers were nesting in the Bunduki area during the expedition's stay there. A pair of birds were observed incubating eggs in a nest placed in a giant clump of bamboo that overhung the stream near our camp. The species was very aggressive and would respond immediately to a squeaking decoy call.

FAMILY TURDIDAE

*Turdus abyssinicus nyikae* Reichenow

One male, testes slightly enlarged, was collected at Bunduki, Uluguru Mountains, January 11. The bird shows signs of feather replacement in the wings. In considering this specimen as *nyikae*, we are following Mackworth-Praed and Grant (1955:332), who concluded that *T. o. uluguru* was not distinct, but we may register a suspicion that further study with adequate comparative material may reinstate *uluguru* as a valid race. Moreau (1940:459) used the latter subspecific designation.

The olive thrush may be fairly common in the Ulugurus, but mist nets yielded only a single specimen. The species was not met with in the Ukaguru Mountains, but it is quite possible that it occurs there.



*Zoothera gurneyi otomitra* (Reichenow)

One female, taken at Mandege, Ukaguru Mountains, on January 21, adds the Ukagurus to the localities in which this ground-thrush is known to occur. It was previously recorded from the Ulugurus, the Usambaras, and north-eastern Tanganyika generally, wherever suitable forests are found. The specimen is in much abraded plumage.

The single specimen was flushed from the forest floor in dense mist forest. No other individuals were observed.

*Saxicola torquata promiscua* Hartert

One male, testes slightly enlarged, was taken at Bunduki, Uluguru Mountains, January 12. Schuster (1926:740) reported the species abundant in the Ulugurus in 1913.

*Cossypha caffra iolaema* Reichenow

One adult male, one subadult male, two juvenal females, were taken at Bunduki, Uluguru Mountains, January 6 to 9; one adult male at Mandege, Ukaguru Mountains, January 20. The subadult bird is largely in adult plumage but still has some of the dusky scallop-margined feathers of immaturity on the breast and upper abdomen and also still has the pale buffy streaked feathers on the forehead, sides of face, and on the entire occiput. One of the juvenal birds could hardly have left the nest more than 10 days before it was collected, as its tail feathers are only about half grown. The Kenya robin-chat was recorded from the Ulugurus by Schuster (1926:740-741).

Robin-chats were common in thickets and secondary forest growth along trails and about native cultivations. They were very inquisitive and readily responded to squeaking decoy calls.

*Modulatrix stictigula stictigula* (Reichenow)

Four specimens of this species, still rare in collections, were obtained: two males and one female at Bunduki, Uluguru Mountains, January 8, 13, 14, and one male at Mandege, Ukaguru Mountains, January 21. The species is apparently restricted to mountain forests of Tanganyika, the nominate race being known from the Usambara, Uluguru, Ukaguru, Uzungwe, and Ukinga ranges, while a smaller and darker race *pressa* is recorded from the Nkuku Forest on Mt. Rungwe in southwestern Tanganyika. The Ukaguru bird agrees in all respects with its Uluguru counterparts. Moreau (1940:456) found Uluguru birds to be intermediate in size and in color between typical *stictigula* of the Usambaras and *pressa*, but felt they should not be designated by a different name as they formed part of a cline of progressively darker and smaller birds from north to south.

The presence of this thrush in both the Ulugurus and the Ukagurus was detected only with the use of mist nets set in heavy forest. Total netting time

in both mountain ranges yielded only the above four specimens, which indicates that the species was not very numerous.

*Alethe fülleborni usambarae* Reichenow

Two males of this shrike-like thrush were taken, one at Bunduki, Uluguru Mountains, January 14, and one at Mandege, Ukaguru Mountains, January 21. Both had the testes slightly enlarged. Their wings measured 106 and 108 mm. respectively, very slightly longer than Reichenow's type, 103 mm. This bird continues to be very rarely collected, and hence additional specimens are always welcome.

A shy species, and, as with the other forest thrushes, it was only detected by the use of mist nets set in dense forest at ground level.

*Pogonocichla stellata orientalis* (Fischer and Reichenow)

A surprising series of 24 specimens of this rather elusive denizen of the forest floor was obtained within a fortnight's collecting in the Uluguru and the Ukaguru Mountains. Such a result could only be accomplished with the use of mist nets, as the white-starred bush-robin is ordinarily not too easy to approach. The present series contains 5 juvenal, 4 immature, and 15 birds in adult plumage. Their localities and dates are as follows: Bunduki, Uluguru Mountains, 3 juvenal males, 2 juvenal females, one immature male, 5 adult males, 4 adult females, January 6 to 14; Mandege, Ukaguru Mountains, 3 immature males, 2 adult males, 4 adult females, January 18 to 22. Three specimens were marked as having the gonads somewhat enlarged.

This species is of unusual interest in that it shows geographical, racial, differences in either having, or skipping, the immature plumage. The present subspecies has this intermediate plumage well developed, but the race *guttifer*, of the highlands of northeastern Tanganyika as far east as Mt. Kilimanjaro, is said not to have this stage but to molt directly from the juvenal into the adult plumage.

Considering the number of local races of this woodland bird in the forest "islands" of East Africa, it is remarkable, as Moreau (1951:397) has already pointed out, that *orientalis* has as extensive a range as it does, encompassing isolated forests from as far south as Namuli in Mozambique, Kungwe near the southeastern corner of Lake Tanganyika, and the Uluguru and Ukaguru Mountains in central Tanganyika.

Although shy, the white-starred bush-robin proved to be an abundant species in both the Ulugurus and the Ukagurus. As mentioned above, the use of mist nets yielded large numbers of these attractive birds—so many in fact that large numbers were liberated. Although the species is abundant on the forest floor, it also forages through the crown of the forest. Specimens collected from the tree tops were located only by the sharp eyes of Nandi hunters. Often it required considerable patience on the part of these men to point out the presence of this bird in the forest crown.

## FAMILY SYLVIIDAE

*Sylvia atricapilla atricapilla* (Linnaeus)

The blackcap is a winter visitor from Europe and is very common in much of eastern Africa during the northern winter season: two males were collected at Mandege, Ukaguru Mountains, on January 19 and 22.

*Sylvia borin* (Boddaert)

One female of the European garden warbler, a common winter visitor to eastern Africa, was collected at Mandege, Ukaguru Mountains, on January 21.

*Sathrocercus mariaae usambarae* (Reichenow)

Six specimens of this forest warbler were collected: at Bunduki, Uluguru Mountains, January 6 to 14, four females; at Mandege, Ukaguru Mountains, January 18 and 19, one adult male and one immature female. The young bird differs from the others in having a yellowish wash on the abdomen. Two of the birds were noted as having small ovaries. The Mandege adult and one of those from Bunduki have narrow blackish pectoral streaks, the young bird has them also but less dusky in tone; the other three show little trace of them.

Although frequently heard in deep forest at both Bunduki and Mandege, the forest warbler was seldom seen. The species was readily trapped in mist nets set on the forest floor, however.

*Phylloscopus trochilus acredula* (Linnaeus)

One male was collected on January 21 at Mandege, Ukaguru Mountains. This Palearctic winter visitor is said (Mackworth-Praed and Grant, 1955:384) to reach only as far south as the Sudan and Ethiopia during the northern winter. The present specimen has the underparts as white as *acredula*. It has faint yellow streaks on the breast, but has the wing formula of *trochilus* and not of *collybita*.

*Apalis flavigularis griseiceps* Reichenow and Neumann

Three males and two females were collected at Mandege, Ukaguru Mountains, January 18 to 21. One of the birds was noted as showing slight gonadal enlargement. This subspecies ranges from the Chyulu Hills of southeastern Kenya to northeastern and south-central Tanganyika, and is now recorded for the first time from the Ukagurus. It is remarkable that in the not too distant Ulugurus there is a different race characterized by having a much darker forehead, crown, and occiput and by having the abdominal yellow deeper and more extensive, extending anteriorly to the dusky pectoral band.

An exceedingly common species in the forests of both the Ulugurus and the Ukagurus, occurring in the crown of the forest as well as close to the forest floor. Large numbers were caught in mist nets in the latter area, and released.

*Apalis flavigularis uluguru* Neumann

This race, restricted to the Uluguru Mountains, is represented in the present collection by two males and two females collected at Bunduki, January 6 to 14, where it was numerous.

*Apalis flavida golzi* (Fischer and Reichenow)

On January 25, 5 miles south of Babati, one female of this warbler was collected.

*Artisornis metopias* (Reichenow)

Two examples of each sex were taken at Bunduki, Uluguru Mountains, on January 6 to 12. The females are slightly smaller than the males. In the Usambaras the breeding season of this warbler is said to be in January, and it would be expected that in the Ulugurus it would be about the same. However, there are no indications of the gonadal condition on the labels of the present specimens.

Hall and Moreau (1962:341) give good reasons for submerging the genus *Artisornis* in *Orthotomus*. The two make very similar stitched nests, and the species *metopias* is remarkably similar in structure and in coloration to the Asiatic *O. sepium*. The only deterrant to making this change is that the nest of the second African species, *moreaui*, has yet to be discovered. If it also is a stitched structure, the case would seem definite. If it is not, and since *moreaui* and *metopias* seem related, it may be necessary to retain *Artisornis* for them.

The use of a binomial for the present specimens is a matter of conforming to the nomenclature of Mackworth-Praed and Grant (1955). However, it may be pointed out that in an earlier study (Friedmann, 1928:478) the Uluguru birds, separated as a race *altus*, were found to be characterized by having the middle of the throat washed with reddish brown, the sides and flanks browner, less grayish, than typical "ruficeps" of the Usambaras. Moreau (1940:461) found *altus* to be a valid, recognizable subspecies. The present specimens agree with the characters of *altus*, but no comparative material has been available for study.

Red-capped forest warblers, although shy and secretive, appeared not to be too rare in the Bunduki area of the Ulugurus. The species was encountered in the tall grass and vegetation in the dense forest. All four specimens were secured with mist nets, set in the vegetation described. The species was not noted in the Ukagurus but it may occur there as it has been recorded from the Nguru Hills.

*Scepomycter winifredi* (Moreau)

This relatively recently discovered monotypic genus of warbler is known only from the Uluguru Mountains. At Bunduki, on January 10, 11, and 14, four examples, three males and one female, were obtained. These were in breeding condition, a fact that concurs with the statement of Williams (1951:

469) to the effect that the breeding season of this bird begins in October and continues until February or March.

Although previously recorded from only the Uluguru Mountains, a warbler of this species was definitely observed at Mandege on January 17, 1964. The bird was observed at very close range in heavy forest, but due to circumstances could not be collected at that time. A subsequent search for the bird at the same spot failed to disclose the species, nor were any other individuals observed or collected during the expedition's short stay at Mandege.

At Bunduki, all four specimens were secured by mist nets set in dense forest. An analysis of the contents of the stomachs of three of the four specimens showed them to be filled with insect material as follows: Orthoptera (Acrididoidea, Blattoidea); Hemiptera (Heteroptera); Coleoptera (Carabidae, Tenebrionidae or Alleculidae, Curculionidae); Hymenoptera (Formicidae). The most abundant insects of the above listed orders were weevils (Curculionidae).

*Cisticola chiniana fischeri* Reichenow

Three examples from northern Tanganyika are attributable to this race; one male from 5 miles south of Babati, January 25, and two males, east side of Lake Manyara, January 26. The rattling *Cisticola* appeared to be a common bird in the low savannah country about Lake Manyara.

*Cisticola cantans pictipennis* Madarasz

One male was taken at Bunduki, Uluguru Mountains, January 11; a female at Mandege, Ukaguru Mountains, January 21. This appears to be a southern extension of the range of this race, hitherto not recorded south of northern Tanganyika, around Arusha and the Usambara Mountains.

*Cisticola galactotes nyansae* Neumann

One male was taken at Babati, northern Tanganyika, on January 25. The specimen was mist netted in a grassy patch in the heart of the town.

*Prinia subflava tenella* (Cabanis)

One male was collected 2 miles east of Mlali, at the west foot of the Uluguru Mountains, on January 13. This is one of the common, widespread warblers of eastern Africa.

FAMILY HIRUNDINIDAE

*Hirundo angolensis angolensis* Bocage

One immature male, one adult female and two immature females, collected at Bunduki, January 7 to 11, extend the known range of this swallow to the Uluguru Mountains. Angola swallows were abundant about Bunduki and several were observed with nests at the buildings of the Catholic mission school there.



*Psalidoprocne holomelaena holomelaena* (Sundevall)

One female, in breeding condition, was taken at Bunduki, Uluguru Mountains, on January 11. This black swallow is apparently common in the Ulugurus, where it has been recorded from Bagilo, and Nyange as well as from Bunduki. In referring this specimen to the nominate race, we are following the decision of Mackworth-Praed and Grant (1955:554) in considering *massaica* as a synonym. In an earlier report (Friedmann, 1928:84) the latter name, then currently recognized, was used for Uluguru specimens.

Black rough-winged swallows were observed flying in and out of holes in the bank of a road cut at Mandege, in the Ukagurus, between January 17 and 22, 1964.

## FAMILY LANIIDAE

*Eurocephalus anguiformis rüppelli* Bonaparte

One male, with enlarged testes, was collected on the east side of Lake Manyara, on January 28. The bird shows evidence of ecdysis, especially in the wings.

*Lanius cabanisi* Hartert

Two females of the long-tailed fiscal were collected on the east side of Lake Manyara, on January 29. The species was common in this area and observed daily.

*Urolestes melanoleucus aequatorialis* Reichenow

On the east side of Lake Manyara, January 26 to 28, two males and two females of this magpie-shrike were collected.

Most authors who have had occasion to discuss the plumages of this bird write that the sexes are alike. However, the present two females differ markedly from the males in having the lateral feathers of the lower breast and the abdomen broadly edged with white; in one of the specimens these white edgings are much broader and encompass the entire outer webs of these feathers. Shelley (1912:233) seems to be one of the few writers who have noted a similar sexual plumage dimorphism in this species.

*Laniarius fülleborni ulugurensis* Rand

A good series of the sooty bush-shrike was collected, as follows: Bunduki, Uluguru Mountains, January 8 to 12, two males, one female; Mandege, Ukaguru Mountains, January 19 to 21, four males, two females. Fuggles-Couchman (1939:98) had already recorded this shrike from the Ukagurus, where he collected a male in breeding condition on December 15 at 5,500 feet. Rand (1957:49) described the population of the Ulugurus as a new subspecies *ulugurensis*, on the basis of their grayer, more of a dark slate, color than the birds of the Usambara Mountains (*usambaricus*) and suggested that Nguru Mountain birds might also be *ulugurensis*. The present series indicates that the birds of the Ukagurus agree with those of the Ulugurus, but the former

are very slightly grayer than the latter. We cannot help but wonder if the species may not have been subdivided into too many races on slight characters. The females are paler, more grayish than the males from the same localities, a fact which makes one wonder at the distinctness of *usambaricus*, the type of which is a male, and *ulugurensis*, based on a female specimen. In this connection it may be noted that Diesselhorst (1961) concluded that *ulugurensis* should be considered the same as typical *fülleborni*.

In both the Ulugurus and the Ukagurus, the sooty bush-shrike was a common species of heavy forest and the dense thickets of secondary plant growth on the periphery of human habitations. It is an inquisitive species and was often decoyed into view by "squeaking."

*Laniarius aethiopicus sublacteus* (Cassin)

Two specimens, one male taken at Bunduki, Uluguru Mountains, January 10 and one female collected 2 miles east of Mlali, west foot of the Ulugurus, January 13, are referred to this subspecies on geographical grounds, but with some reservations. According to Jackson (1938:1213) and to Mackworth-Praed and Grant (1955:613) *sublacteus* should have the wings plain black with no white on the middle, upper coverts or on the inner secondaries. Both present specimens have some white, more extensive in the Mlali than in the Bunduki bird, and they may therefore be considered intermediates between *sublacteus* and *major*. Jackson's description admits some occasional white on the scapulars in *sublacteus*, so it appears that there is some variability in this character. The present race had been recorded previously from Nyange, in the Uluguru Mountains (Friedmann, 1928:87).

*Dryoscopus cubla nairobiensis* Rand

At Bunduki, Uluguru Mountains, January 6 to 10, two males and two females of the puff-back shrike were collected. One of the birds was noted as having slightly enlarged gonads.

*Chlorophoneus nigrifrons* (Reichenow)

Two of the various color phases of the black-fronted bush-shrike were collected; at Bunduki, Uluguru Mountains, January 6 to 12, three males in the slightly orange-yellow breasted phase and one female in the buff breasted plumage; at Mandege, Ukaguru Mountains, January 19 to 21, three males and one female in the buff breasted phase.

One of the yellow breasted males has faint dusky transverse bars on the throat, breast and upper abdomen, and lacks the orange or apricot tinge found on the other two; it may be subadult. The females of the buff-breasted phase are somewhat duskier below than the males and one of them also has the faint transverse bars.

Chapin (1947:53-64; 1954:36) summarized the geographic occurrence of the four color phases of this bird; black-breasted males are known only in the

Usambaras and on Mt. Namuli in Mozambique; red-breasted birds of both sexes are recorded from Kenya, from Mt. Kilimanjaro, and from the Katanga south to the Transvaal; yellow-breasted examples are known from Kenya and Tanganyika; and buff-breasted birds from Mt. Kenya, Teita, and Tanganyika. The species is restricted everywhere in its range to highland forests. Sclater and Moreau (1933:198-201, pl. 6) figured in color three of the phases of this shrike. From a footnote to their account (p. 198) we learn that C. M. F. Swynerton collected one ("*münzerni*") in the Ulugurus, the only published reference to his having worked in that mountain mass. In a later paper, Moreau and Southern (1958:310) concluded that the Uluguru population, completely isolated on all sides, has developed no distinctive characters of its own.

Without exception, all specimens of the black-fronted bush-shrike collected in the Uluguru and Ukaguru Mountains were secured from the crown of the forest, rather than from the lower levels of tree growth.

*Malaconotus alius* Friedmann

This large black-capped bush-shrike, wholly restricted to the Uluguru Mountains, was sought for diligently but not obtained by the expedition, although one example, an adult male, taken on May 20, 1952, by Th. Andersen, was acquired for the collection. It must be a bird of low numerical status and very local in its distribution to have evaded the search made for it. Hall and Moreau (1962:347) concluded that the area it inhabits is probably less than 100 square miles, but they suggested that it might occur in some of the small patches of woodlands on the mountains immediately to the west of the Ulugurus. So far no one has found it there.

FAMILY CORVIDAE

*Corvultur albicollis* (Latham)

What appeared to be a "family group" of five white-necked ravens was seen at Mandege, Ukaguru Mountains, on January 20, and four of the birds were collected; an adult male, an immature male, and two immature females. The adult was in an active phase of molt as it has several new remiges and rectrices only partly grown. The immature birds, fully grown in size, have well marked grayish diagonal areas on either side of the breast extending postero-ventrally from the lateral ends of the white nuchal collar, and also have some similar grayish feathers immediately behind the white collar giving it a "frayed" look.

FAMILY ZOSTEROPIDAE

*Zosterops senegalensis stierlingi* Reichenow

A series of this widely distributed white-eye was collected in both the Uluguru and the Ukaguru Mountains. At Bunduki, one male and four females were taken, January 7 to 10; at Mandege, three males and two females were obtained January 18-19. The present nomenclatural usage for these specimens is based on the findings of Moreau's exhaustive study (1957) which differs in

many points from the listing in Mackworth-Praed and Grant (1955). Moreau concluded that the whole of the *Zosterops* inhabiting southern tropical Africa belong to the same species, *senegalensis*, and that the racial name *stierlingi* may be retained for the more richly pigmented birds of the highlands of Tanganyika and Nyasaland. He pointed out (p. 368) the possibility of some hybridization of *stierlingi* with *flavilateralis* at Kibungo, 700 feet, eastern foot of the Ulugurus, as some of the lowland birds there show convergence toward the forest-edge birds of the higher mountains. He also stated (p. 405) that the birds, "... some yellower and some greener (usually called *anderssoni* and *stierlingi*) of Nyasaland and south-western Tanganyika (north to Uluguru and Usambara) form a special case, and that local color trends are traceable through the highlands southward from Iringa."

In the absence of anything comparable to the material studied by Moreau, his conclusions are followed here. It may be pointed out, however, that the Ukaguru specimens are brighter yellow below, and very slightly darker above, than the Uluguru birds. The Ukaguru birds also have more yellow on the forehead than the Uluguru examples, but the latter are variable in this respect, the extremes variants ranging from birds with no well defined frontal yellow to others with almost as much yellow as in the Ukaguru birds. Without Moreau's large study as a source of background information against which to view these two series of specimens, it would have seemed valid to consider them as representing two races, but in the light of his statement about localized color trends, it seems advisable to call them all the same, and to be content merely to mention their observable differences.

#### FAMILY NECTARINIIDAE

##### *Cinnyris mediocris moreaui* W. L. Slater

At Mandege, Ukaguru Mountains, January 18 to 21, ten adult males, one immature male, and one adult female were obtained. The female and the immature male are alike in coloration but the latter is larger and has a much longer bill, agreeing in this respect with the ten adults. Two of the adult males have metallic green upper tail coverts; in all the others these feathers are bright violet blue. Mackworth-Praed and Grant (1955:785) wrote that the female has a "metallic greenish grey wash on head and mantle." This is not found in our present example of this sex or in the immature male, both of which have the head and entire upperparts dark olive green. Two of the adult males were noted as having the testes slightly enlarged.

This sunbird had been recorded previously from Vingwele in the Ukagurus, and also from the Uvidundas by Fuggles-Couchman (1939:102).

##### *Cinnyris loveridgei* Hartert

Loveridge's sunbird is wholly restricted to the Uluguru Mountains, where it occurs at elevations of about 2,500 to 7,500 feet in the forest. At Bunduki, January 7 to 14, a series of ten adult males, four adult females and one im-



mature male were collected. One of the females may have been wrongly sexed as it has a few metallic green feathers on the crown, wings, mantle, and throat. The fact that fifteen specimens could be collected in a week suggests that the bird is common where it occurs.

*Cinnyris venustus falkensteini* Fischer and Reichenow

One immature male, collected at Bunduki, Uluguru Mountains, on January 14, was in the process of acquiring the purplish feathering on the throat and breast, but elsewhere it is in juvenal plumage.

*Cyanomitra olivacea alfredi* Vincent

This race of the olive sunbird was obtained in both the Ulugurus and the Ukagurus. In the former range, at Bunduki, January 6 to 14, three males and four females were collected; at Mandege, in the Ukagurus, January 18 to 21, five males, one female and one unsexed bird were taken. The specimens from the two mountain masses are alike. Besides the above specimens, one other male was taken at Mandege. It agrees fairly well with the others in dimensions and in dorsal coloration, but differs markedly below. The chin and throat are pale yellow and the center of the abdomen also has some blotches of still paler yellow among the olive green feathers of the breast, sides, and flanks. The feathers of these areas are much greener, less grayish than in all the other examples of *alfredi*, and this individual has two further points of difference: it lacks the yellow tufts on the sides of the chest and it has a faint suggestion of a pale orange spot at the postero-median part of the throat. It was taken to the United States National Museum for further comparison, and there were found two examples of the nominate race from southern Mozambique that agreed with it in having the touch of orange-red on the middle of the lower throat, and that also had considerable yellow on the throat and middle of the abdomen, although not as much yellow as in the Mandege bird. However, two males of *C. o. cephaelis* from Gabon proved to be just as yellow on the underparts and also lacked the yellow pectoral tufts. It seems therefore that the Mandege bird belongs with this species, and may represent a little known plumage phase. It certainly does not approximate any other species in its characters.

*Anthreptes collaris elachior* Mearns

At Bunduki, Uluguru Mountains, January 8, one adult male was collected, another was taken at Mandege, in the Ukagurus, January 19. Both birds had the testes somewhat enlarged. The Uluguru example has a slightly longer bill, but the difference is only 2 mm. Otherwise the two are similar.

FAMILY PLOCEIDAE

*Bubalornis albirostris intermedius* (Cabanis)

One adult male red-billed buffalo-weaver was collected on the east side of Lake Manyara on January 28. It had the gonads slightly enlarged, about 2 mm. in length.



*Histurgops ruficauda* Reichenow

One male with large gonads and one female of this weaver were collected on January 28, east of Lake Manyara. Several nesting colonies of this large weaver were observed in clumps of acacias on the undulating ground close to the east shore of Lake Manyara. Each tree held from fifteen to twenty nests.

*Passer griseus griseus* (Vieillot)

One adult male gray-headed sparrow was collected at Babati, on January 26, where it was a common species about the village.

*Amblyospiza albifrons montana* van Someren

At Bunduki, Uluguru Mountains, two specimens were collected on January 8. One is a female, the other is marked as a male but is in the streaked plumage of the female and is thus probably immature. It is slightly darker above and the ventral, especially the pectoral, streaks are darker and heavier than in the female.

Both of the above specimens were taken simultaneously in a mist net set in the tall grass at the edge of the river. These individuals were the only two birds of this species seen in the Bunduki area.

*Ploceus bertrandi* (Shelley)

Two adult males were collected at Bunduki, Uluguru Mountains, on January 8 and 10, respectively. Also obtained there was a female, which appears to have been a young bird, and which represents a plumage that has not been described in the literature. It has a shorter bill, culmen 15 mm. (18 mm. in adult males), the mandible horn color, the maxilla black, and has no black on the head, the forehead, crown, occiput, sides of face olive green like the back, but has a well defined yellow collar conterminous latero-ventrally with the yellow of the throat and breast, entire underparts from chin to under tail coverts yellowish with a faint orange tinge on the breast. The wings, tail, back and rump are like those areas in the adult males.

*Ploceus ocularis suahelicus* Neumann

Four males, one female of the spectacled weaver were collected at Bunduki, Uluguru Mountains, January 6 to 9; one marked as a male, but female by plumage, was taken 2 miles east of Mlali, at the west foot of the Ulugurus, on January 13. Two of the males had enlarged gonads.

*Quelea cardinalis rhodesiae* Grant and Mackworth-Praed

Three males and two females of the cardinal quelea were obtained on the east side of Lake Manyara on January 29. The red coloration in the three males extends well down on the breast, and does not extend posteriorly from the hind crown to the occiput, making it obvious that these birds are *cardinalis* and not *erythrope*.

A common species about Lake Manyara where it was found travelling in mixed flocks with *Quelea quelea*. A mist net set in the tall savannah grass caught over one hundred individuals from one fast flying flock, much to the consternation of the Nandi trapper tending the net. The above series and those of *Quelea quelea* were obtained from this flock.

*Quelea quelea aethiopica* (Sundevall)

On the east side of Lake Manyara, on January 29, six specimens of this common weaver were collected, three of each sex. The males were all noted as having somewhat enlarged testes.

*Euplectes gierowii friederichseni* Fischer and Reichenow

One female of this weaver was collected 2 miles east of Mlali, at the west foot of the Uluguru Mountains, on January 13. This appears to be the first record for this species from the Ulugurus; it probably does not ascend very far into the mountains but is a denizen of the lower foothills only.

*Euplectes orix nigrifrons* (Böhm)

At Babati on January 25 and 26, four males of this bishop bird were obtained. This is a wide-ranging inhabitant of much of eastern Africa from Uganda and Kenya to Nyasaland and Mozambique.

*Euplectes capensis crassirostris* (Ogilvie-Grant)

One male was taken at Bunduki, Uluguru Mountains, January 10. It is in the "off season" plumage. The species had previously been recorded from the Ulugurus, under the racial name *zambesiensis*, which is now considered a synonym of *crassirostris* (Moreau, 1962:69).

*Euplectes axillaris zanzibaricus* (Shelley)

Three males and one female of this species were collected at Babati on January 25 and 26 where they were found to be abundant in the tall grass about the village.

*Spermestes nigriceps nigriceps* Cassin

At Bunduki, Uluguru Mountains, one male and two females of this mannikin were collected on January 6. This species was common about Bunduki and the above specimens were secured with mist nets set in the tall grass at the river's edge.

*Cryptospiza reichenovii australis* Shelley

At Bunduki, Uluguru Mountains, two males and three females were collected January 7 to 14; at Mandege, Ukaguru Mountains, five males and three females were taken January 19 to 22. This species of crimson-wing had been

known from other localities in the Ulugurus. The series from the Ukagurus are like the birds of the Ulugurus in every respect. A very common species along the roads and trails at both Bunduki and Mandege.

*Lagonosticta rubricata haematocephala* Neumann

One male of this common little fire-finch was collected 2 miles east of Mlali, western foot of the Uluguru Mountains, on January 13.

*Coccopygia melanotis kilimensis* Sharpe

At Bunduki, Uluguru Mountains, four males and one female yellow-bellied waxbills were collected, January 6 to 8; at Mandege, Ukaguru Mountains, two additional males were obtained on January 18 and 19. The specimens from the two mountain areas are alike. These small waxbills were very common in secondary growth on the periphery of forest clearings and along trails.

*Granatina ianthinogaster ianthinogaster* (Reichenow)

One adult male was collected 5 miles south of Babati, on January 25. The purple grenadier is a common bird in the low country from central Kenya to southern Tanganyika.

FAMILY FRINGILLIDAE

*Carduelis citrinelloides hypostictus* (Reichenow)

Two males and two females of this citril were collected at Bunduki, Uluguru Mountains, January 6 to 12; one male was taken at Mandege, Ukaguru Mountains, January 19. The species appeared to be common in both mountain areas.

FAMILY EMBERIZIDAE

*Emberiza orientalis orientalis* (Shelley)

At Bunduki, Uluguru Mountains, one male three-streaked bunting was collected on January 8. It was in breeding condition with very large testes. A few additional individuals were observed, but the species did not appear to be common in the Bunduki area, nor was it met with in the Ukaguru Mountains.

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